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PATENT SPECIFICATION

(11) 1281770

1281770

DRAWINGS ATTACHED

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(54) APPARATUS FOR THE STORAGE OR DISPLAY OF MERCHANDISE

- (71) We, OSF INDUSTRIES LIMITED, a Canadian Corporation of 2256 Lakeshore Boulevard West, Toronto 14, Ontario, Canada, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described by the following statement:—
- This invention relates to apparatus for the storage or display of merchandise.
- In particular, the invention has to do with a simple means for connecting post members and frame members together and then locking them together. The locking mechanism also provides for a means whereby the members are locked together so that the structure can be shifted from place to place or lifted without becoming disconnected.
- Many structures providing a sectional unit which can be quickly disconnected and assembled have been proposed. Many of those provide, either no means for locking the members of the unit together or, in cases where such provision is made, the locking means is quite complicated and expensive to manufacture, and unlocks when the unit is lifted.
- An object of the present invention, at least in its preferred form, is to provide a simple structure for connecting post members and frame members together and to provide a simple locking means which can be operated and actuated by an allen wrench, screw driver or other simple tools.
- According to the present invention there is provided apparatus for the storage or display of merchandise, comprising four tubular corner post members of rectangular or square cross section, frame members adapted to interconnect said post members to form a four sided structure in which the post members are disposed upright and the frame members extend horizontally, each post member including one pair of first slots in each of two contiguous faces thereof, a reciprocable latch member therein, said latch member being formed with second slots corresponding to and substantially registerable with respective ones of the first slots and the portion of the latch member above each second slot forming a latch plate, a movable member within the post member and connected to said latch member for moving the latch member in a direction
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which is downwards when the post member is upright in the four-sided structure to move each latch plate downwardly to a position partially to obstruct its respective first slot, and resilient means urging said latch member in the opposite direction to a position in which respective first and second slots substantially register, and each upper frame member having on each of its ends a pair of spaced tongues to enter one of the pairs of the upper first slots and registering second slots, and each lower frame member having on each of its ends a tongue positioned to enter one of said lower first slots and the registering second slot, each of said tongues having an upper latch plate receiving notch, the arrangement being that each tongue notch is brought into engagement with the adjacent latch plate by the movable member when the tongue is entered into registering first and second slots and is locked therein by downward movement of the latch plate.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, wherein:—

Fig. 1 is a perspective view of a table including the embodiment of the present invention;

Fig. 2 is a fragmentary perspective view illustrating a means by which frame members are connected to a post member;

Fig. 3 is a vertical cross section through one of the post members each of which is as shown in Fig. 2 to show the details of the construction;

Fig. 4 is a fragmentary view of the top end of the post member shown in Fig. 3 with a section of a frame member connected thereto;

Fig. 5 is a cross section on the line 5—5 of Fig. 4; and

Fig. 6 shows details of two of the tongues.

Referring firstly to Fig. 1, there is therein illustrated, a table which comprises four corner post members 10, 11, 12, 13; a pair of intermediate post members 14, 15; all post members being joined together to form a unitary structure by upper frame members 16, 17, 18, 19, 20, 21 and lower frame members 22, 23, 24, 25, 26, and 27. The intermediate post members 14, 15 are used when it is desired to extend the table. If it is desired to have a small table, the post members 14, 15 are not used, and only post members 10, 11, 12, 13 are used.

As the means for connecting the frame members to their respective post members are identical for all post members, the invention will be described with reference to corner post members 10, 11 and related parts, except that the intermediate post member 14, 15 are provided with slots in three faces with the third set of slots being provided for intermediate rail members, not shown, between the intermediate post members.

Post member 10, in the preferred embodiment is substantially square in cross-section and made of tubular steel or any other suitable material.

Each post member has four flat faces 28, 29, 30 and 31.

The face 29 of the post member 10, near the upper end thereof is provided or formed with a pair of slots 32, 33. The contiguous face 30 is formed with corresponding slots 34, 35. Adjacent the bottom end of the post member, the face 29 is formed with a slot 36 and the contiguous face 30 is formed with a corresponding slot 37. Both of these slots are co-planar with slots 32, 33 and slots 34, 35 respectively and are substantially the same size as slots 32 to 35.

Slidably mounted within the post member, is a reciprocable latch member 38 of U-shape in cross-section and of such a length as to extend from substantially the top of the post member to adjacent the bottom thereof. The latch member 38 is supported on a spring 39, the spring being held in place by the plug 40 which carries a foot 41 on which the post member is supported and which can be used for levelling the table. The spring 39 is biased to urge constantly the latch member to an open position, in which position, the top end of the latch member engages the top end of the post member. This position is hereinafter referred to as the unlocked position. The latch member is provided with slots corresponding in number to the post member slots 32—37 hereinbefore mentioned and positioned to register substantially with each of the post member slots when the latch member is in the unlocked position. The slots in the latch member are numbered 42—47 respectively.

The upper end of the latch member is formed with a screw-threaded wall 48. An adjusting screw 49 is threaded into the threaded wall 48 and extends upwardly and has its head 50 abutting against the inner wall of the top end of the post member, the upper end of the post member having an orifice 51 through which the tool can be entered for turning the screw to effect a movement of the latch member as hereinafter described. The portion of the latch member contiguous to the top of each of the slots 42—47 respectively, forms a latch plate. When the screw 49 is turned in one direction the latch plates are moved down to obstruct partially the upper and lower slots 32—37 respectively.

Each end of each upper and lower frame member is provided with the same means for connecting the respective ends of the frame members to the respective posts and they will therefore be described with reference to Fig. 2. The upper frame member 18 is provided with two tongues 52, 53 and the lower frame member 24 is provided with a tongue 54. All of these tongues are identical in cross-section and are dimensioned to fit neatly into the

respective pairs of registering slots with the necessary clearance. Each tongue has a projecting portion 55 which is formed with a notch 56 in the upper edge thereof which
 5 when the projection is inserted into its respective pair of registering slots, the notch will register with its respective latch plate. As clearly shown in Fig. 4, each notch is provided with a sloping lead-in surface 57 which co-
 10 operates with the latch plate to ensure that the lock is closed completely and that the ends of the frame members are drawn tightly against a post member when the latch member is moved downwardly. A notch 58 is formed in
 15 the bottom edge of the tongue 55, the lower edge of the slot in the post member engaging in the notch 58 when assembling the frame and the post members. This engagement allows complete assembly and alignment of all frame
 20 and post members before locking. A table employing the subject matter of this invention is easy to assemble and dismantle. Fig. 2 shows how the frame members are brought into the assembled position. As soon as the
 25 tongues are inserted in the respective pairs of slots, the latch member is moved downwardly by turning the screw 49. That movement causes the latch plates to be moved downwardly and engage in each of the respective
 30 notches. When it is desired to dismantle the table, the screw 49 is turned in the opposite direction and the latch member moves to the unlocked position by the spring 39.

WHAT WE CLAIM IS:—

35 1. Apparatus for the storage or display of merchandise, comprising four tubular corner post members of rectangular or square cross section, frame members adapted to interconnect said post members to form a four sided
 40 structure in which the post members are disposed upright and the frame members extend horizontally, each corner post member including one pair of first slots in each of two contiguous faces thereof, a reciprocable latch
 45 member therein, said latch member being formed with second slots corresponding to and substantially registerable with respective ones of the first slots and the portion of the latch member above each second slot forming a
 50 latch plate, a movable member within the corner post member and connected to said latch member for moving the latch member in a direction which is downwards when the corner post member is upright in the four
 55 sided structure to move each latch plate downwardly to a position partially to obstruct its respective first slot, and resilient means urging said latch member in the opposite direction to a position in which respective first and second
 60 slots substantially register, and each frame member having on each of its ends a pair of spaced tongues to enter one of the pairs of said first slots and the registering second slots, and each tongue having an upper latch plate
 65 receiving notch, the arrangement being that

each tongue notch is brought into engagement with the adjacent latch plate by the movable member when the tongue is entered in said registering slots and locked therein by the downward movement of the latch plate.

2. Apparatus according to claim 1, wherein of said two faces of each corner post member having said first slots, the first slots in one face are at the same positions lengthwise of the corner post member as the slots in the other face.

3. Apparatus according to Claim 1 or 2 including two additional post members, each of which is similar to each of said first mentioned four post members, but said additional post members having a pair of first slots in each of three contiguous faces thereof, the apparatus including six of said frame members.

4. Apparatus for the storage or display of merchandise, comprising four tubular corner post members of rectangular or square cross section, upper frame members and lower frame members adapted to interconnect said corner post members to form a four sided structure in which the post members are disposed upright and the upper and lower frame members extend horizontally, each corner post member including one pair of upper first slots at the upper end of the post member and a lower first slot at the lower end of the post member in each of two contiguous faces thereof, a reciprocable latch member therein, said latch member being formed with second slots corresponding to and substantially registerable with respective ones of the first slots and the portion of the latch member above each second slot forming a latch plate, a movable member within the corner post member and connected to said latch member for moving the latch member in a direction which is downwards when the corner post member is upright in the four-sided structure to move each latch plate downwardly to a position partially to obstruct its respective first slot, and resilient means urging said latch member in the opposite direction to a position in which respective first and second slots substantially register, and each upper frame member having on each of its ends a pair of spaced tongues to enter one of the pairs of the upper first slots and registering second slots, and each lower frame member having on each of its ends a tongue positioned to enter one of said lower first slots and the registering second slot, each of said tongues having an upper latch plate receiving notch, the arrangement being that each tongue notch is brought into engagement with the adjacent latch plate by the movable member when the tongue is entered into registering first and second slots and is locked therein by downward movement of the latch plate.

5. Apparatus according to claim 3, wherein of said two faces of each corner post member

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having said first slots, the first slots in one face are at the same positions lengthwise of the post member as the slots in the other face.

- 5 6. A structure according to Claim 4 or 5 including two additional post members, each of which is similar to each of said first mentioned four corner post members but said additional post members having a pair of upper first slots and a lower first slot in each of three contiguous faces thereof, the apparatus
10 including six of said upper frame members and six of said lower frame members.

- 15 7. An apparatus according to claim 1, 2, 3, 4, 5 or 6 in which each tongue is formed with a lower notch which receives the lower edge of the post member slot in which it is entered to retain the tongue therein when it is locked.

- 20 8. Apparatus according to any preceding Claim, wherein each upper latch receiving notch has a sloping lead-in face whereby each latch plate is guided into full engagement in the notch and draws the end of the frame member into tight abutting engagement against the post member.

9. Apparatus according to any preceding claim in which each movable member comprises a screw member having one end screw threaded into a threaded hole formed in the upper end of the associated latch member and the other end abutting against the upper end of the associated post member, said upper end of the post member having an orifice for the entry of a tool to turn the screw member to move said latch member downwards and the resilient means comprises a spring which is located in the lower end of the post member and which acts to urge said latch member upwardly. 25 30 35

10. A four-side structure constructed from the apparatus according to any preceding claim. 40

11. A structure for the storage or display of merchandise substantially as hereinbefore described with reference to the accompanying drawings.

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COMPLETE SPECIFICATION

2 SHEETS

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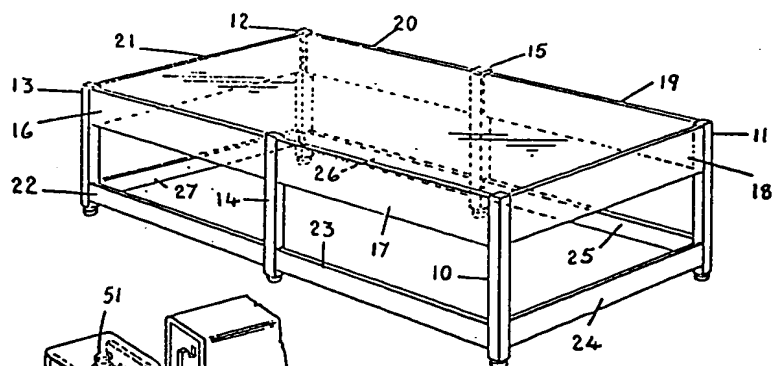


Fig. 1.

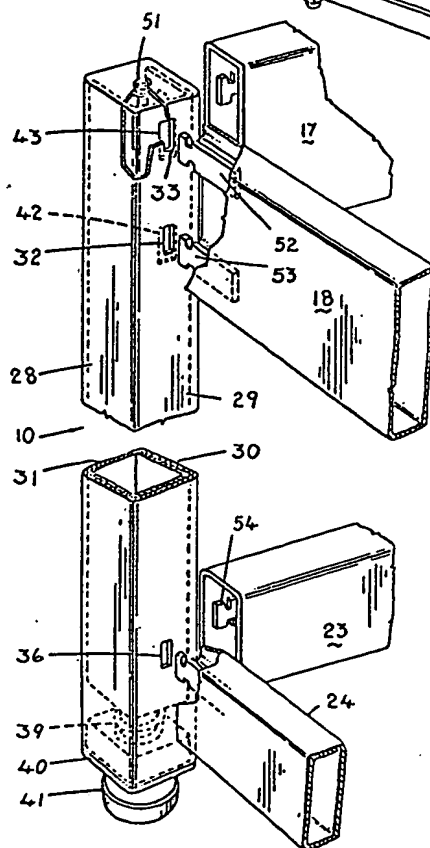


Fig. 2.

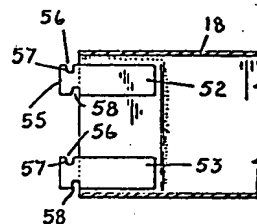


Fig. 6.

1281770 COMPLETE SPECIFICATION
 2 SHEETS *This drawing is a reproduction of
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 Sheet 2

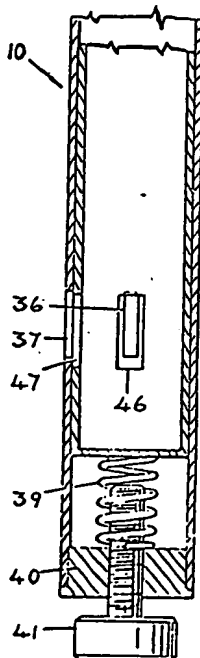
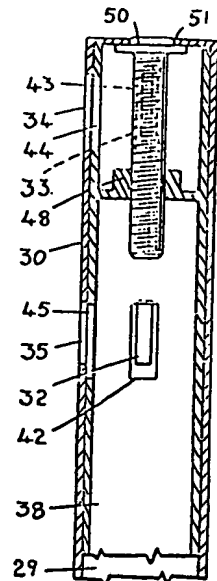


Fig. 3.

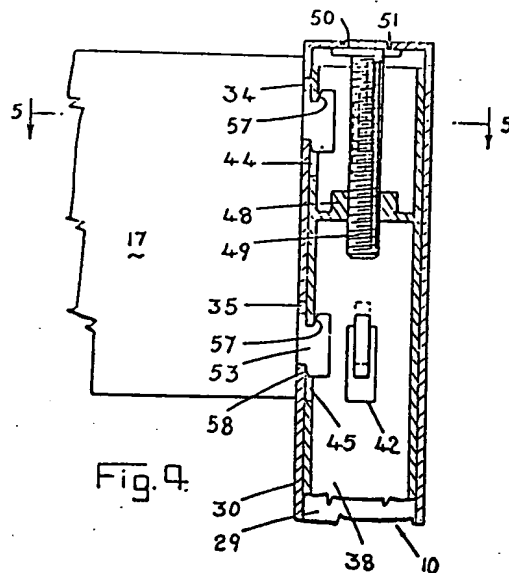


Fig. 4.

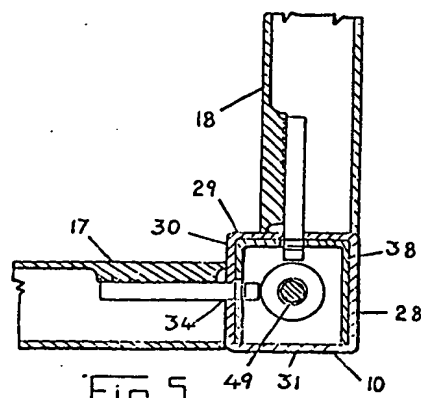


Fig. 5.